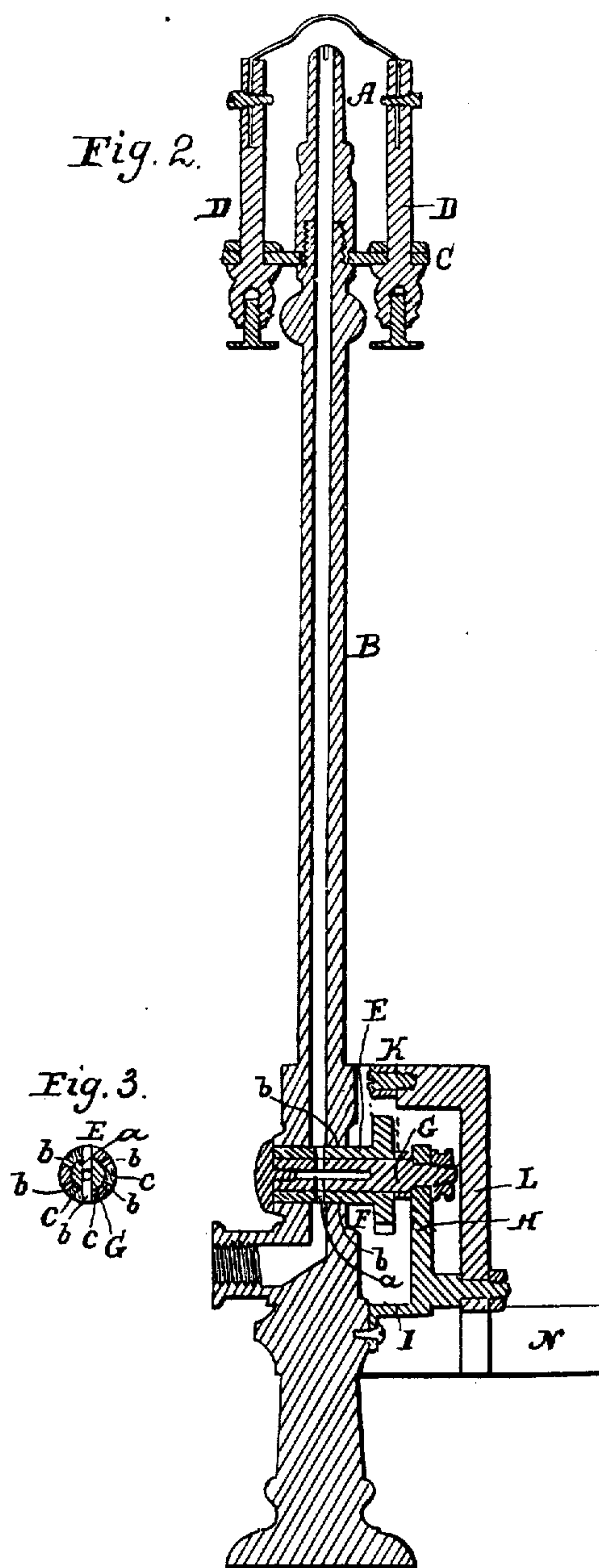
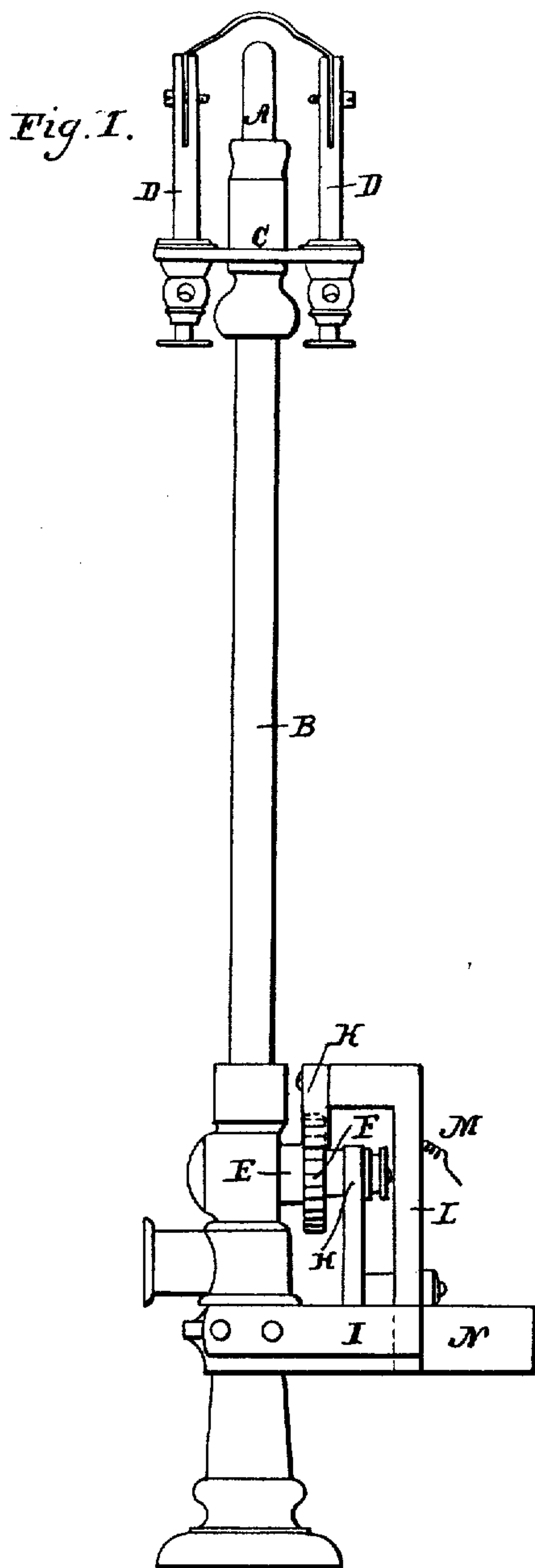


J. A. HEYL.  
Electric Gas Lighter.

No. 58,943.

Patented Oct. 16, 1866.



Witnesses:  
Samuel W. Piper  
George Andrews

Inventor:  
John A. Heyl  
By his Attorney,  
R. H. Edsall

# UNITED STATES PATENT OFFICE.

JOHN A. HEYL, OF BOSTON, ASSIGNOR TO HIMSELF AND GEORGE H. BAILEY, OF HUDSON, MASSACHUSETTS.

## IMPROVEMENT IN ELECTRIC GAS STOP-COCKS.

Specification forming part of Letters Patent No. 58,943, dated October 16, 1866.

*To all whom it may concern:*

Be it known that I, JOHN A. HEYL, of Boston, in the county of Suffolk and State of Massachusetts, have made a new and useful invention having reference to Mechanism for Inflaming Illuminating-Gas through the Agency of Electricity; and I do hereby declare the same to be fully described in the following specification and represented in the accompanying drawings, of which—

Figure 1 is a front elevation, and Fig. 2 a longitudinal section, of a gas-burner and its electrical lighting apparatus as provided with my invention. Fig. 3 is a transverse section of the improved cut-off, to be hereinafter described.

In such drawings, A denotes an ordinary gas-burner, screwed upon a conduit or tubular column, B, for conveying illuminating-gas to such burner.

C is a cross-head, made of glass, vulcanite, or other proper non-conductor of electricity. It projects in opposite directions from the column B, and serves to support two metallic clamps, D D, which are for holding a piece of platinum wire, to extend directly over and across the burner. These clamps are provided with connections for attaching to them the current-wires of an electric battery.

A tube, E, extends transversely through the column B, and is fixed to ratchet F. A cylinder, G, fitting the bore of the tube, goes through the tube, and has one end so connected with a foot or standard, H, as to render such cylinder stationary while the tube may be in revolution on it. The said standard H projects upward from an arm, I, extending from the base part of the column B.

A passage, *a*, leads vertically through the cylinder G, and in the axis of the bore of the column B. There are also in the tube E six or any other suitable even number of holes, *b b b b*, arranged at equal distances apart, and with spaces *c c c* between them at least equal to the diameter of the holes. Each of such holes *b* should be arranged directly opposite some other hole in the circle—that is, so that their axes shall be in one straight line, in order that the two, when brought into conjunction with the hole *a*, may open a pas-

sage for the gas to the burner; but when any one of the spaces *c* covers the hole *a* the supply of gas to the burner will be cut off.

The ratchet is to be operated by a pawl, K, jointed to the end of the longer arm of a lever, L, to whose shorter arm is affixed the armature N of an electro-magnet. A spring, M, serves to retract the lever and the pawl.

With an electro-magnetic circuit, a key, and a battery, or suitable means of generating electricity, the electro-magnet being properly arranged with respect to the armature, the lever of such armature may be set in motion.

By repeatedly breaking and closing the current by the key an operative, through the attractive power of the magnet and by the reaction of the spring, can effect an intermittent rotary motion of the tube or cut-off, or tube E, on the stationary spindle or cylinder G. By so doing he can very quickly cut off or open the supply of gas to the burner. Were he to employ a common cock with a single passage through it, instead of the perforated tube and the cylinder, made and arranged as described, he would be obliged to rotate the ratchet nearly if not quite half a revolution before getting a supply of gas to the burner; but with my improvement the obtaining of the supply as well as its stoppage may be effected with very little movement of the ratchet.

The apparatus above described is intended for inflaming a jet of gas from a burner and extinguishing such flame through the agency of electricity.

The circuit, when thrown through the platinum wire, will heat it to redness, and when the jet of gas is discharged against such wire so heated such jet will be inflamed.

By such apparatus the gas-burners of a building, or even those of a large city, may be lighted at once, and may be readily extinguished from any central point and by one individual.

Now I do not claim the application of electricity to heat a wire for inflaming gas; nor do I claim the application to a common gas-cock of a ratchet and an electro-magnetic apparatus for revolving such ratchet.

What I claim as my invention is—

The above-explained improved cut-off, consisting of the stationary cylinder G and the rotary tube E, provided with passages *a b*, arranged in them as described, in combination with the ratchet F and the gas-burner conduit, the whole being substantially as and

for the purpose and to operate as hereinbefore explained.

JOHN A. HEYL.

Witnesses:

R. H. EDDY,  
F. P. HALE, Jr.